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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,791	10/19/2001	Shinya Kondoh	1165-763-1	6744

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EXAMINER

MENGISTU, AMARE

ART UNIT	PAPER NUMBER
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2673

18

DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,791

Applicant(s)

KONDOH, SHINYA

Examiner

Amare Mengistu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-14, 16, 18-21, 23, 25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14, 16, 18-21, 23, 25 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **“driving circuit comprises switches”** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. Claim 11 recites the limitation **“the driving circuit comprises a switches”** in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 11,18,25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nito et al** (5,659,411) in view of **Jono et al** (5,078,477) and **Imoto et al** (6,259,492).

As to claims 11,18,25-26, **Nito et al** (hereinafter **Nito**) clearly teaches an antiferroelectric liquid crystal panel including an antiferroelectric liquid crystal between a pair of substrates (see, figs.3, 71-77, col.9, lines 13-24, lines 44-49, col.10, lines 43-51, col.42, lines 39 - col.43, lines 3), which comprises a driving circuit adapted to output a layer structure controlling voltage waveform (see, figs.23A-23C, 39,70A-70E) having a frequency of 1 HZ to 100 HZ and a voltage in the range of +10 V to +50 V or -10 V to -50 V, for an optional length of time (see, figs. 39, 70A -70E (2 filed of time), col.21, Table 5). **Nito** has failed to teach that the layer of the antiferroelectric liquid crystal structure changes from a chevron to a bookshelf. However, the patent of **Jono et al** clearly teaches that it is well known for antiferroelectric liquid crystal structure to change from a chevron to a bookshelf (see, Abstract, col.3, lines 60-64) and the layer structure controlling voltage waveform is a square wave (see, fig.3).

Nito has also failed to teach that the driving circuit switches from the display driving voltage to the layer structure controlling voltage to a period of time. **Jono et al** states that it is conventional for antiferroelectric liquid crystal display to change the display driving voltage to a layer structure controlling voltage for a period of time (col.4, lines 16-40). It is inherent for **Jono's** device to have a display driving circuit in order to apply a voltage to the electrodes to change the structure of the liquid crystal layer.

Nito as modified by **Jono** antiferroelectric liquid crystal display to change the display driving voltage to a layer structure controlling voltage for a period of time, but did

not disclose that the switching to the layer structure controlling voltage waveform at a predetermined interval time. **Imoto et al** is cited to teach that it is well known for antiferroelectric to switch the layer structure by controlling voltage waveform at a predetermined time interval (see, figs. 23-25; col.27, lines 4-58).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to use the waveform method of **Imoto et al** into the system of **Nito**, because this will provide the display system free from burn-in and achieving high display quality by providing by preventing pixel brightness from varying between pixels continuously held in an ON state.

2. Claims 12-14,16,19-21,23, are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nito et al** (5,659,411) in view of **Jono et al** (5,078,477) and **Imoto et al** (6,259,492). Further in view of **Tanaka et al** (5,459,481)

As to claims 12-14,16,19-21,23, **Nito** as modified by **Jono** and **Imoto** discloses an antiferroelectric liquid crystal display having a voltage waveform having a certain frequency and voltage value in a filed by filed bases and but a temperature change that reduces the layer spacing in the antiferroelectric liquid crystal (see, col.11 (tables 1 and 2); col.21 (table 5)). **Nito** did not teach having a temperature sensor. However, one skill in the art would have recognized that the device of **Nito** has to have a temperature sensor in order to measure the temperature. **Nito** has failed to teach the length of the time is equal to one frame excluding a rest period and a control circuit to output a scanning signal. However, the patent of **Tanaka et al** (hereinafter **Tanaka**) discloses an antiferroelectric liquid crystal display system in which the optical length time is equal to the period of one frame excluding a reset period (see, fig.30); the pair of

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substrates are provided with a scanning electrodes and signal electrodes, and wherein the panel which outputs the layer structure controlling voltage waveform to the scanning electrodes (see, figs.27-29). Tanaka did not explicitly disclose having a control circuit. It would obvious that the Tanaka's system includes a control circuit in order to provide the scanning electrodes a scanning signal.

Therefore it would have been obvious to one skill in the art at the of the invention was made to use the method of outputting a voltage waveform in a frame by frame to the scanning electrode into the device of **Nito**, because this is an alternative way of deriving an antiferroelectric liquid crystal display and provide a fast response in the switching for a smooth scrolling of a pointing device.

Response to Arguments

2. Applicant's arguments with respect to claims 11-26 have been considered but are moot in view of the new ground(s) of rejection.

In figure 11 and in the specification the element [15] indicates as a power supply circuit and has never been disclosed as "**A driving circuit**".


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amare Mengistu whose telephone number is (703)305-4880. The examiner can normally be reached on M-F,T-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703)305-4938. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-9600.


Amare Mengistu
Primary Examiner
Art Unit 2673

Amare Mengistu
Feb.21 2004